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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/025,862 | 12/26/2001 | Hong-Man Moon | 8733.567.00 | 7627 |

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MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

LANDAU, MATTHEW C

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| ART UNIT | PAPER NUMBER |
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2815

DATE MAILED: 07/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,862

Applicant(s)

MOON ET AL.

Examiner

Matthew Landau

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 13 May 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on May 13, 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because of the following informalities: the limitation “each connecting line connecting each pixel to each electrostatic discharge device” also renders the claim indefinite. It is unclear if one pixel is connected to one electrostatic device, or if one pixel is connected to all electrostatic devices, or if one connecting line connects all pixels to all electrostatic devices. For the purposes of this Office Action, it is considered that each pixel is connected to one electrostatic discharge device.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-10, 12, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki et al. (US Pat. 5,926,234, hereinafter Shiraki) in view of the admitted prior art.

In regards to claim 1, Figures 1-4 of Shiraki disclose a substrate 1 having a display region and a non-display region; a plurality of pixels 7 in the display region; a plurality of first and second electrodes (7a and 24) on the substrate; a plurality of electrostatic discharge devices 10 in the non-display region, wherein each electrostatic discharge device is at a distance of more than one pixel pitch from the pixels; and a plurality of first connecting lines in the non-display region, each connecting line connecting each pixel to each electrostatic discharge device. The difference between Shiraki and the claimed invention is an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. Figure 4 of the instant application discloses an in-plane switching device wherein a plurality of first and second electrodes (34 and 36) such that an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Shiraki by using the in-plane switching device of the admitted prior art for the purpose of increasing the viewing angle of the device (page 4, lines 20-24 of the instant application).

In regards to claim 2, Figures 1-4 of Shiraki disclose a plurality of switching devices 8 on the substrate.

In regards to claim 3, Figures 1-4 of Shiraki disclose each switching device 8 is disposed in each pixel.

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In regards to claim 4, Figures 1-4 of Shiraki disclose the switching device 8 includes a thin-film transistor.

In regards to claim 5, Figures 1-4 of Shiraki disclose first and second lines (3 and 2) on the substrate 1.

In regards to claim 6, Figures 1-4 of Shiraki disclose the first and second signal lines (3 and 2) apply signals to each switching device 8.

In regards to claim 7, Figures 1-4 of Shiraki disclose the first line 3 includes a gate line.

In regards to claim 8, Figures 1-4 of Shiraki disclose the second line 2 includes a data line.

In regards to claim 9, Figures 1-4 of Shiraki disclose the first electrodes 7a include a pixel electrode.

In regards to claim 10, Figures 1-4 of Shiraki disclose the second electrodes 24 include a common electrode.

In regards to claim 12, Figures 1-4 of Shiraki disclose a plurality of pads 6 in the non-display region.

In regards to claim 14, Figures 1-4 of Shiraki disclose a plurality of second connecting lines 11 in the non-display region.

In regards to claim 15, Figures 1-4 of Shiraki disclose each second connecting line 11 connects each electrostatic discharge device 10 to each pad 6.

In regards to claim 16, the intended use limitation “wherein a voltage of the first connecting lines is different from a voltage of the electrostatic discharge devices” does not structurally distinguish the claimed invention over Shiraki.

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In regards to claim 17, the intended use limitation “wherein each first connecting line receives signal voltage of inverted phase” does not structurally distinguish the claimed invention over Shiraki.

In regards to claim 18, Figures 1-4 of Shiraki disclose an auxiliary line 11 in the non-display region.

In regards to claim 19, Figures 1-4 of Shiraki disclose the auxiliary line 11 connects each of the electrostatic discharge devices 10.

In regards to claim 20, it is further obvious in the invention of Shiraki and the admitted prior to have the auxiliary line receive a signal applied to the second electrode to contain the flow of ions.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki in view of the admitted prior art as applied to claim 1 above, and in further view of Seraphim et al. (US Pat. 5,889,568, hereinafter Seraphim).

A further difference between Shiraki and the claimed invention is one pixel pitch is between about 1mm and about 1.5. Seraphim discloses an LCD device wherein the pixel pitch is one millimeter (column 15, lines 45-50). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Shiraki by having a 1mm pixel pitch for the purpose of simplifying the fabrication process.

Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki in view of the admitted prior art as applied to claim 12 above.

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A further difference between Shiraki and the claimed invention is each pad is between about 1 to about 2.5 mm from each electrostatic discharge device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of by having each pad separated from each ESD device by about 1 to about 2.5 mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection. However, since the rejection of Shiraki in view of Seraphim is similar to the previous rejection of the admitted prior art in view of Serephim, Applicant's arguments regarding claim 11 will be addressed. It is noted that the disclosures of Shiraki and Serephim are both directed towards liquid crystal display devices. Therefore they are "in the field of applicant's endeavor" and qualify as analogous art. Furthermore, Serephim is merely relied upon for the teaching of the pixel pitch. Therefore, the specific problem addressed by the invention of Serephim is not germane to the rejection set forth above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

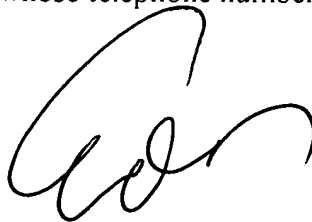
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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (703) 305-4396.

The examiner can normally be reached from 8:00 AM-4: 30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Matthew C. Landau

Examiner

July 19, 2003